# BIOMETRICS

VOLUME 10: 1954
Numbers 1–4

*Published Quarterly by*
THE BIOMETRIC SOCIETY
NEW HAVEN, CONN.
1954

## STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

BIOMETRICS published Quarterly at New Haven, Connecticut for January-December, 1954

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

| *Name* | *Address* |
|---|---|
| Publisher, The Biometric Society | 52 Hillhouse Ave., New Haven, Conn. |
| Editor, Prof. Gertrude Cox | Box 5457, College Station, Raleigh, North Carolina |
| Managing Editor, Mrs. Sarah P. Carroll | Box 5457, College Station, Raleigh, North Carolina |
| Business Manager, None. | |

2. The owner is: (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

| *Name* | *Address* |
|---|---|
| The Biometric Society | 52 Hillhouse Ave., New Haven, Conn. |

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

| *Name* | *Address* |
|---|---|
| None | |

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation. the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.).....

Sarah P. Carroll, Managing Editor

Sworn to and subscribed before me this 29th day of September, 1954.

[SEAL]

Katherine C. McKimmon
(My commission expires April 17, 1955)

# BIOMETRICS

## Contents of Volume X


| | |
|---|---|
| ABSTRACTS | 160, 302, 569 |
| NOTES | 192 |
| QUERIES | 155, 298, 407, 562 |
| THE BIOMETRIC SOCIETY | 189, 315, 414, 571 |

ABELSON, ROBERT M. and RALPH A. BRADLEY, A $2 \times 2$ Factorial with Paired Comparisons 487

ABELSON, ROBERT M. and RALPH A. BRADLEY, *Abstract* #273 303

ALMOND, JOYCE, A Note on the $\chi^2$ Test Applied to Epidemic Chains 459

ANDERSEN, S. L. (*See* BOX, G. E. P.)

ANSCOMBE, F. J., Fixed-Sample-Size Analysis of Sequential Observations 89

BARBENSI, G., *Abstract* #240 161

BARGETON, D., *Abstract* #297 313

BAUER, R. K., *Abstract* #293 312

BENTZON, MICHAEL WEIS (*See* MEYER, SVEN NISSEN)

BENTZON, M. W., *Abstract* #267 185

BERKSON, JOSEPH (*see* DEWS, PETER B.)

BERKSON, J., *Abstract* #259 178

BIGGERS, J. D. and P. J. CLARINGBOLD, *Abstract* #301 569

BINET, F. E. and H. T. CLIFFORD, *Abstract* #300 568

BLISS, C. I., *Abstract* #241 162

BOX, G. E. P., The Exploration and Exploitation of Response Surfaces: Some General Considerations and Examples 16

BOX, G. E. P., and S. L. ANDERSEN, Abstract #272 303

BRADLEY, RALPH ALLAN, Incomplete Block Rank Analysis: On the Appropriateness of the Model for a Method of Paired Comparisons 375

BRADLEY, RALPH A. (*See* ABELSON, ROBERT M.)

BROSS, IRWIN, A confidence Interval for a Percentage Increase 245

BROSS, IRWIN, Misclassification in $2 \times 2$ Tables 478

CALVIN, LYLE D., Doubly Balanced Incomplete Block Designs for Experiments in which the Treatment Effects are Correlated 61

CLARINGBOLD, P. J. (*See* BIGGERS, J. D.)

CLIFFORD, H. T. (*See* BINET, F. E.)

COCHRAN, W. G., The Combination of Estimates from Different Experiments 101

COCHRAN, W. G., Some Methods for Strengthening the Common $\chi^2$ Tests 417

DARMOIS, G., *Abstract* #261 180

DEWS, PETER B., GEORGE M. HIGGINS and JOSEPH BERKSON, Error of the Determination of the Eosinophil Count in Peritoneal Fluid of the Rat 221

DOERING, H., *Abstract* #294 312

FAVERGE, J. M., *Abstract* #270 302

FEDERER, W. T. and C. S. SCHLOTTFELDT, The Use of Covariance to Control Gradients in Experiments 282

FINNEY, D. J., *Abstract* #258 177

FISHER, R. A., The Analysis of Variance with Various Binomial Transformations 130

FISHER, SIR RONALD, *Abstract* #243 164

FRÉCHET, MAURICE, *Abstract* #260 179

FREE, S. M., *Abstract* #278 305
FREEMAN, G. H. (*See* HOBLYN, T. N.)
GEBELEIN, H., *Abstract* #284 308
GEIDEL, H., *Abstract* #285 308
GOODALL, D. W., *Abstract* #263 183
GRANDAGE, ARNOLD H. E., *Abstract* #277 305
GRAYBILL, FRANKLIN, Variance Heterogeneity in a Randomized Block Design 516
GRUNDY, P. M., D. H. REES and M. J. R. HEALY, Decision between Two Alternatives—How Many Experiments? 317
HAMAKER, H. C., *Abstract* #269 187
HAYMAN, B. I., The Analysis of Variance of Diallel Tables 235
HEALY, M. J. R. (*See* GRUNDY, P. M.)
HEALY, M. J., *Abstract* #249 168
HEMPHILL, F. M., Suggested Desk Calculator Operations for Computing Moments by the Row 152
HIGGINS, GEORGE M. (*See* DEWS, PETER B.)
HOBLYN, T. N., S. C. PEARCE and G. H. FREEMAN, Some Considerations in the Design of Successive Experiments in Fruit Plantations 503
HOBLYN, T. N. and S. C. Pearce, *Abstract* #257 176
HOLT, L. B., *Abstract* #254 173
HOPKINS, J. W., Incomplete Block Rank Analysis: Some Taste Test Results 391
HOPKINS, J. W., Some Observations on Sensitivity and Repeatability of Triad Taste Difference Tests 521
HOPKINS, J. W., *Abstract* #247 167
HOUSEHOLDER, A. S. (*See* KIMBALL, A. W.)
HUDDLESTON, HAROLD F., *Abstract* #281 306
HULL, FRED H., *Abstract* #283 307
HUNTER, J. S., *Abstract* #279 306
IPSEN, J., *Abstract* #253 172
KARREMAN, G., *Abstract* #266 185
KARREMAN, GEORGE, *Abstract* #282 307
KEITER, F., *Abstract* #287 309
KEULS, M., *Abstract* #248 167
KIMBALL, A. W. and A. S. HOUSEHOLDER, A Stochastic Model for the Selection of Macronuclear Units in Paramecium Growth 361
KIMBALL, A. W., Short-Cut Formulas for the Exact Partition of $\chi^2$ in Contingency Tables 452
KNOWLES, E. A. G., *Abstract* #268 186
KODLIN, D. (*See* KRECH, U.)
KRECH, U. and D. KODLIN, *Abstract* #280 306
LANCASTER, H. O., *Abstract* #299 568
LEDERMANN, SULLY C., *Abstract* #296 313
LEGAY, J. M., *Abstract* #271 302
LEIN, A., *Abstract* #288 309
LI, C. C. and LOUIS SACKS, The Derivation of Joint Distribution and Correlation between Relatives by the Use of Stochastic Matrices 347
LOWRY, D. C., *Abstract* #245 165
LUSH, J. L., *Abstract* #246 166
MANDEL, JOHN, Chain Block Designs with Two-Way Elimination of Heterogeneity 251
MARTIN, L., *Abstract* #239 160
MARTIN, L., *Abstract* #251 171
MATHER, K., *Abstract* #244 164
MEYER, SVEN NISSEN and MICHAEL WEIS BENTZON, Further Studies on the Significance of Family Factors for the Response to BCG Vaccination: The Development of Local Vaccination Lesions and Their Relation to Allergy Production 195
MOORE, P. G., A Note on Truncated Poisson Distributions 402
MORAN, P. A., *Abstract* #298 568
MUENZNER, H., *Abstract* #289 310
NELDER, J. A., A Note on Missing-Plot Values 400
OWEN, A. R. G., *Abstract* #264 183

PANSE, V. G., *Abstract* #256 174
PARKER-RHODES, A. F., *Abstract* #262 181
PEARCE, S. C. (*See* HOBLYN, T. N.)
PETERSEN, R. G., *Abstract* #276 304
PRIGGE, R., *Abstract* #252 171
RAO, C. RADHAKRISHNA, Estimation of Relative Potency from Multiple Response Data 208
RAO, C. RADHAKRISHNA, *Abstract* #250 170
READ, D. R., The Design of Chemical Experiments 1
REES, D. H. (*See* GRUNDY, P. M.)
SACKS, LOUIS (*See* LI, C. C.)
SAMPFORD, M. R., The Estimation of Response-Time Distributions: III Truncation and Survival 531
SCHLOTTFELDT, C. S. (*See* FEDERER, W. T.)
SIECKMANN, W., *Abstract* #290 310
SMITH, C. A. B., *Abstract* #265 184
THOMPSON, W. A., JR., *Abstract* #275 304
TWEEDIE, M. C. K., *Abstract* #274 304
VAN DER REYDEN, D., Design and Analysis of Soil Insecticide Field Experiments 291
VESSEREAU, A., *Abstract* #242 162
VON GUÉRARD, H. W., *Abstract* #286 308
WALTER, E., *Abstract* #291 311
WELTE, E., *Abstract* #295 312
WETTE, R., *Abstract* #292 311
WORCESTER, JANE, How Many Organisms? 227
YATES, F., The Analysis of Experiments Containing Different Crop Rotations 324
YATES, F., *Abstract* #255 174
ZELEN, MARVIN, Analysis for Some Partially Balanced Incomplete Block Designs Having a Missing Block 273